

JAPANESE

[JP,09-197394,A]

CLAIMS DETAILED DESCRIPTION TECHNICAL
FIELD PRIOR ART EFFECT OF THE INVENTION
TECHNICAL PROBLEM MEANS DESCRIPTION OF
DRAWINGS DRAWINGS

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention]This invention relates to the polarizing plate peel-off equipment for removing the polarizing plate concerned for performing polarizing plate **** repair in case the polarizing plate which was applied to polarizing plate peel-off equipment, especially was pasted together in manufacture of a liquid crystal panel has fault, and passing a regeneration process.

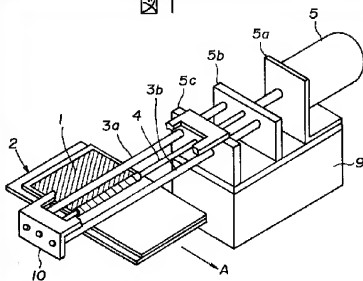
[0002]

[Description of the Prior Art]The liquid crystal display is used abundantly as a flat type display device which displays various kinds of pictures or characters.

[0003]This liquid crystal display unites the printed circuit board etc. in which the necessary drive circuit etc. were carried with the liquid crystal panel which pinched the liquid crystal layer between the transparent electrode substrates of at least two sheets, and the liquid crystal display module which built the back light for Lighting Sub-Division into the undersurface of this liquid crystal panel, and is constituted.

Drawing selection Representative draw

図 1



- 1 : 偏光板
- 2 : 液晶パネル
- 3 a, 3 b : 押さえローラ
- 4 : 巻き取りローラ
- 5 : モータ
- 5 a, 5 b, 5 c : ブラケット
- 9 : 架台
- 10 : フレーム

[Translation done.]

[0004]Predetermined polarization is given to rear surface each surface of the above-mentioned liquid crystal panel at the illumination light from the back up roll, and the polarizing plate (sheet-shaped polarizing member) for choosing the plane of polarization of emitted light is pasted together.

[0005]Drawing 8 is a sectional view explaining the outline structure of a liquid crystal panel, and encloses the liquid crystal layer 2c between the two glass substrates 2a and 2b, It closes by the sealant 2e via the bead 2d for setting it constant, the interval, i.e., the cell gap, between both glass substrates, and is considered as the liquid crystal panel 2, and the polarizing plate 1 pastes together to both sides of this liquid crystal panel, and is constituted.

[0006]The regeneration process which removes this polarizing plate and performs lamination for the second time by the inspection process after the laminating operation of the polarizing plate to the above-mentioned liquid crystal panel when a crack is discovered by the polarizing plate concerned or existence of a wrinkle or garbage is discovered is passed.

[0007]The corner 1a of the polarizing plate 1 which drawing 9 is an explanatory view of the conventional polarizing plate peel-off work, and was stuck on the liquid crystal panel 2 using a cutter knife etc. From the field of a liquid crystal panel to certain quantity. (For example, 20-30 mm) Peel-off and the removed corner 1a are gathered by hand, and it is tearing off polarizing plate 1, pressing down a liquid crystal panel surface by hand.

[0008]

[Problem to be solved by the invention]A polarizing plate is gathered by hand like [the adhesive power of the polarizing plate to a liquid crystal panel is strong, and] above-mentioned before in while, When pressing down a liquid crystal panel by the hand of another side and tearing off a polarizing plate, an uneven pressure is added to a liquid crystal panel, and the cell gap between the glass substrate which has pasted together the polarizing plate which performs length peel-off, and the glass substrate of another side is expanded, or it reduces, Distribution of the bead which has secured the cell gap changes and there is a problem of inviting poor cell GYAPU of the liquid crystal panel after tearing off a polarizing plate.

[0009]The purpose of this invention is to provide the polarizing plate peel-off equipment which solves the problem of the above-mentioned conventional technology, prevents power unnecessary for a liquid crystal panel at the time of the peel-off work of a polarizing plate from being applied, and enabled it to avoid the poor gap of a liquid crystal panel.

[0010]

[Means for solving problem]The means for attaining the above-mentioned purpose is explained with reference to the mark of an embodiment.

[0011]Namely, the rolling-up roller 4 which rolls round said polarizing plate when the 1st invention according to claim 1 rotates in support of the end rim of a polarizing plate, It has the presser-foot rollers 3a and 3b of the couple which has a path which is arranged in parallel with the both sides of said rolling-up roller, and as for which size becomes from the shaft diameter of the rolling-up roller concerned, It had composition which rolls round the polarizing plate 1 stuck on the liquid crystal panel concerned with said rolling-up roller 4, contacting the liquid crystal panel 2 in said presser-foot rollers 3a and 3b. The 2nd invention according to claim 2 equipped said rolling-up roller 4 in the 1st invention with the suspending portion holding the end rim of the polarizing plate 1.

[0012]The 3rd invention according to claim 3 is characterized by the thing of said presser-foot rollers 3a and 3b in the 1st invention or invention of the 2nd for which the peripheral surface was constituted from a charge of a soft material at least.

[0013]This invention is not restricted to the above-mentioned composition. For example, it can replace with a rolling-up roller and a section can also consider the bar of a display round shape as 1 or the composition which may use two and pinches a stop of the end rim of a polarizing plate between two bars.

[0014]

[Mode for carrying out the invention]Hereafter, the illustrated embodiment explains an embodiment of the invention in detail.

[0015]drawing 1 is a perspective view explaining one embodiment of the polarizing plate peel-off equipment by this invention -- 1 -- a polarizing plate and 2 -- as for a liquid crystal panel, and 3a and 3b, as for a motor, and 5a, 5b and 5c, a presser-foot roller and 4 are [a stand and 10] frames a bracket and 9 a rolling-up roller and 5. The polarizing plate peel-off equipment of this example comprises the motor 5 attached to the frame 5a fixed to the stand 9, the rolling-up roller 4 fixed to the axis of rotation of this motor 5, and the presser-foot rollers 3a and 3b of the couple supported by the bracket 5b and the frame 5c.

[0016]Although not illustrated, the panel mounting base which lays the liquid crystal panel 2 in the direction of arrow A movable is also installed as occasion demands.

[0017]The presser-foot rollers 3a and 3b of a couple have the rolling-up roller 4 and a certain interval, and it is arranged in parallel, and the path is a major diameter from

the path of the rolling-up roller 4, and the path of a rolling-up roller is set up to such an extent that the periphery does not press the surface of the liquid crystal panel 2 in the process in which the polarizing plate 1 is rolled round from the liquid crystal panel 2.

[0018]Roll round with the presser-foot rollers 3a and 3b, and the interval between the rollers 4, Permit the work which rolls round the end rim which the polarizing plate 1 stuck on the liquid crystal panel 2 tore off, and is stopped on the roller 4, and. It is considered as the grade which does not affect the cell gap between two glass substrates of a liquid crystal panel by making into the minimum power of acting on the liquid crystal panel 2 in the case of the peel-off work of a polarizing plate with the rolling-up roller 4.

[0019]The presser-foot rollers 3a and 3b are made as [rotate / follow in footsteps of movement / the liquid crystal panel 2 which comprises soft materials, such as rubber, and follows the periphery on the polarizing plate 1 tearing off /, and], and make it not give a damage to the surface of the liquid crystal panel 2, and. He is trying not to apply stress with the liquid crystal panel 2 impossible for.

[0020]Drawing 2 is an explanatory view of an example of work which removes a polarizing plate from a liquid crystal panel.

[0021]When removing the polarizing plate 1 currently stuck on the liquid crystal panel 2, first, from the liquid crystal panel 2, a part of end rim of the polarizing plate 1 is started, it is rolled round only 20-30 mm, by a proper tool, and it fixes to the roller 4 with the pressure sensitive adhesive double coated tape 6. This pressure sensitive adhesive double coated tape 6 is stuck on both ends, or is good for a center only also as one place. By rotating the motor 5 of drawing 1 in this state, the liquid crystal panel 2 is conveyed in the direction of arrow A, the polarizing plate 1 being removed from the liquid crystal panel 2, rolling round, and being rolled round by the roller 4. With the figure, the size and interval of the rolling-up roller 4 and the presser-foot rollers 3a and 3b are expanded and shown, in order to understand easily.

[0022]After peel-off work is completed, the stripped-off polarizing plate 1 is taken over by reversing a motor, where it held the last end by hand, and it took it over or the last end is held by hand.

[0023]The polarizing plate 1 can be removed without this applying an unnecessary pressure to the liquid crystal panel 2.

[0024]Drawing 3 is an explanatory view of the other examples of the work which removes a polarizing plate from a liquid crystal panel.

[0025]In the figure, by a proper tool, the corner of the

polarizing plate 1 currently stuck on the liquid crystal panel 2 is peel-off-passed, and is rolled round, and it fixes to the roller 4 with the pressure sensitive adhesive double coated tape 6.

[0026]The liquid crystal panel 2 is conveyed in the direction of arrow A, the polarizing plate 1 being removed from the liquid crystal panel 2, rolling it round by rotating the motor of [drawing 1](#) in this state, and being rolled round by the roller 4. Like [drawing 2](#), the size and interval of the rolling-up roller 4 and the presser-foot rollers 3a and 3b are expanded and shown, in order to understand easily.

[0027]Similarly, after peel-off work is completed, the stripped-off polarizing plate 1 is taken over by reversing a motor, where it held the last end by hand, and it took it over or the last end is held by hand.

[0028]The polarizing plate 1 can be removed without this applying an unnecessary pressure to the liquid crystal panel 2.

[0029][Drawing 4](#) is an explanatory view of peel-off operation of the polarizing plate by rotation of each roller of the polarizing plate peel-off equipment by this invention, and the rolling-up roller 4 and the presser-foot rollers 3a and 3b of a couple rotate to a uniform direction, and remove the polarizing plate 1 from the liquid crystal panel 2.

[0030][Drawing 5](#) is an explanatory view of other examples of peel-off operation of the polarizing plate by rotation of each roller of the polarizing plate peel-off equipment by this invention, and the rolling-up roller 4 and the presser-foot rollers 3a and 3b of a couple rotate to an opposite direction, and remove the polarizing plate 1 from the liquid crystal panel 2.

[0031][Drawing 6](#) is a sectional view explaining an example of the polarizing plate suspending portion of a rolling-up roller, and 7 rolls round the polarizing plate 1, it is a plate-like member for inserting and fixing to the surface of the roller 4, and has attached it to the longitudinal direction of the rolling-up roller 4.

[0032]Most polarizing plates are removed by the polarizing plate's 1 tearing off and rolling round a part of that end rim from a liquid crystal panel, putting and fixing it between the roller 4 and the plate-like member 7, and rotating a motor in this state.

[0033][Drawing 7](#) is a sectional view explaining the other examples of the polarizing plate suspending portion of a rolling-up roller, 8 is the slot formed over some rolling-up rollers or its longitudinal direction, and removes most polarizing plates by tearing off a part of end rim of the polarizing plate 1 into this slot from a liquid crystal panel, inserting in it, fixing to it, and rotating a motor in this state.

[0034]The structure of the suspending portion which rolls round the end rim of the polarizing plate 1 and is fixed to the roller 4 cannot be restricted to each of above-mentioned examples, and other proper fixing means can be used.

[0035]By the above composition, without applying an unnecessary pressure to a liquid crystal panel, a polarizing plate can be removed easily and the efficiency of ratoon crop business improves remarkably.

[0036]

[Effect of the Invention]As explained above, according to this invention, the polarizing plate peel-off equipment which prevents power unnecessary for a liquid crystal panel at the time of the peel-off work of a polarizing plate from being applied, and enabled it to avoid the poor gap of a liquid crystal panel can be provided.

[Translation done.]